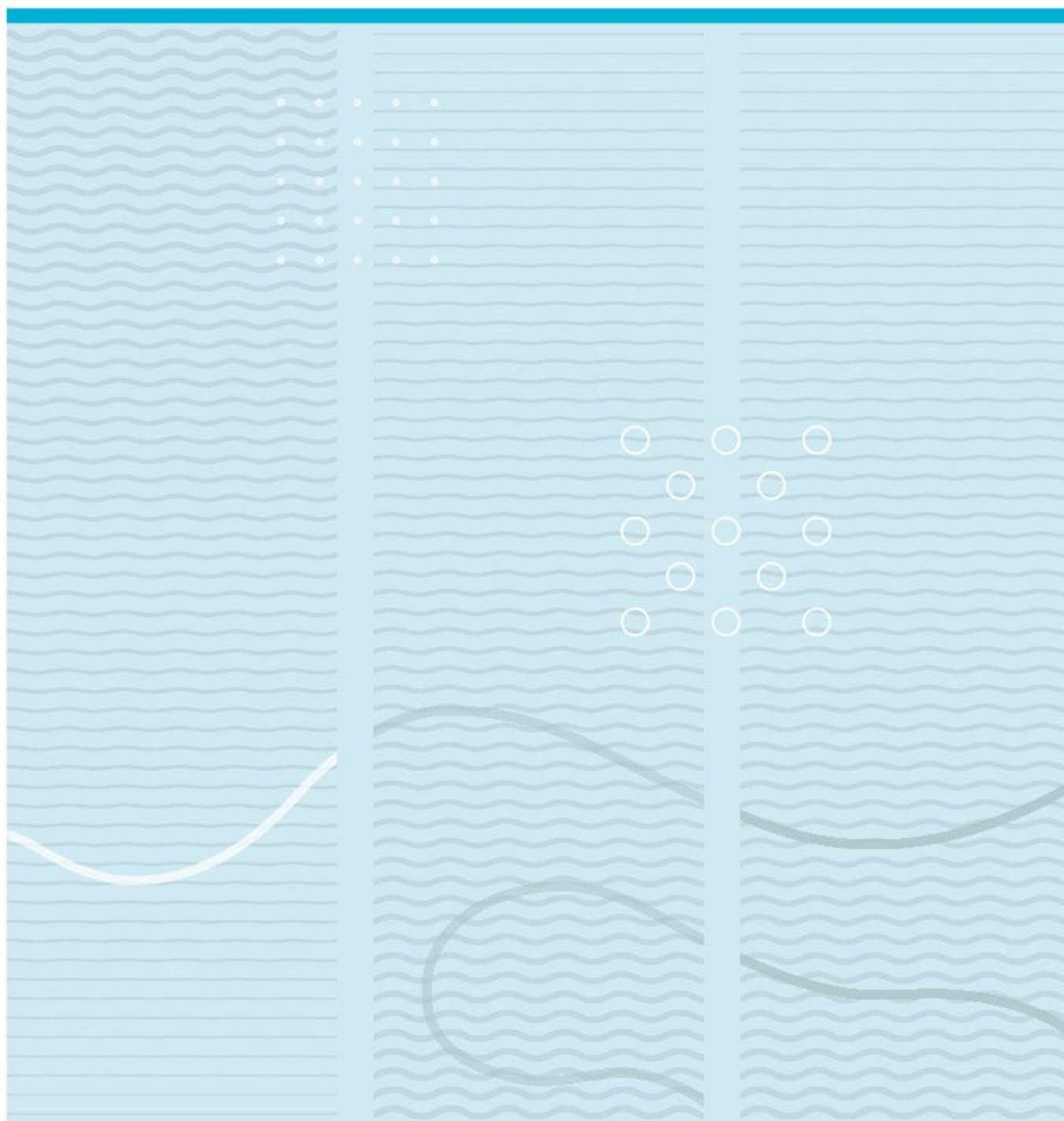


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Assessment of Shared Decision Making in Optometry Using the 9-Item Shared Decision-Making Questionnaire



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This thesis is worth 30 study points

Summary

Background: The perspective of both the patient and the optometrist have an enormous role to play during a clinical encounter. Nevertheless, few studies have been carried out to evaluate shared decision making in optometric practices. This study aims to evaluate shared decision making in optometry from the perspective of both the patient and the optometrist using the 9-item shared decision-making questionnaire (SDM-Q-9 and SDM-Q-Optometrist).

Material and methods: A cross-sectional, survey study was undertaken with participants recruited from Specsavers Norway. Optometrists working in Specsavers stores, and their patients were invited to take part in the study. In all, 12 optometrists from five stores and one to five of their patients volunteered to participate. Data was collected September to October 2020, and all the participants completed either the SDM-Q-9 or the SDM-Q-Optometrist. The Norwegian Centre for Research Data (NSD) approved the study. The statistical analysis was done in Excel/SPSS version 26 using frequency and summation statistics, group difference was analysed using Mann-Whitney U test. A p-value of <0.05 was considered statistically significant.

Result: The average (std) age of the optometrists was 42 (± 11) years ranging from 25 to 63 years. The years of practice for the optometrists was within the range of 1 to 38 years, with average(std) years of practice 17 (± 12) years. The patients age was within the range of 18 to 80 years with an average (std) age of 52 (± 20) years, where most of the patients were female (64%). The median sum SDM-Q-9 score and range for the patients was 41 and from 15 to 45, and for the optometrist, the median sum SDM-Q-Optometrist score and range was 40 and from 22 to 45. However, there is apparently greater variability in patients score compared to optometrists scores. There was no significant difference between the median SDM-9 item scores of the patients and the optometrists, except for item 5 relating to the understanding of all the information (Mann-Whitney U-test 41 versus 40, $p=0.001$).

Conclusion: In this study the patients' perception of shared decision making were higher than the optometrists. The patients reported reasons for what the examination was about, and treatment decisions made matched what the optometrists reported. Patients and optometrists in general did perceived SDM to be satisfactory, however the aspects of provision of information needs more attention. One major limitation of this study is the use of a small sample population, further research using a larger sample size should expand our knowledge on shared decision making in optometric practices.

KEYWORDS

Shared decision making, SDM-Q-9, Norway, Optometry, Cross Sectional Study

This document contains 8800 words.

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Foreword

I would like to thank my husband, Kenneth Nonso Mozie for his motivation, endurance, good ideas and support all through my master's degree program.

My son, Chinedu Bryan, thank you for your constant help and making the whole process much easier for me than I would have imagined. I'm so sure you understood, having to carry your pregnancy and studying at the same time, you didn't really stress me that much and I'm grateful to God for everything.

To my parents and siblings, I would like to say thank you for your endless sacrifices, support and motivations.

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To all the stores of Specsavers Norway who participated in this study, I just want to say thank you for coming through just in time.

Finally, I would like to thank Vibeke Sundling for her understanding, patience and always been there to provide feedback. Thank you also for all the good tips about critical writing.

Kongsberg, October 2020

Chinenye Linda Eze

1 Introduction

Decisions regarding treatment options is an integral component of many clinical encounters. Deciding on the best treatment options is not always distinct as decision making sometimes can be a complex process, especially when two or more treatment options exists (Davis et al., 2003). Traditionally, health care professionals have been influencing the clinical encounters by employing a paternalistic approach. This approach describes a process where health care professionals utilize their skills to diagnose, recommend tests and treatment alternatives on behalf of their patients, without the patients informed choices (Charles, Whelan, & Gafni, 1999; Davis et al., 2003).

Fortunately, this approach has been challenged over several years by patients, ethicists, researchers and even doctors (Charles et al., 1999; Davis et al., 2003). Some of the reasons given for this challenge were increase in the promotion of the interests of consumers and the belief that consumers have a supreme role to play in decisions involving delivering of healthcare; the women's political campaigns for reforms on medical authority; the introduction of laws stressing the importance of patient's rights in their own health care; and dissimilarity in the practice patterns of doctors across different geographical areas not related to variations in health conditions.

The term "Informed Choice" from a clinical perspective can be defined as the patient's awareness of the available treatment alternatives, and then consent to treatment prior to any intervention (Charles, Gafni, & Whelan, 1997; Elwyn et al., 2010).

The involvement of patients in decision making and assisting them in making decisions, have been greatly championed as the ideal model in engaging them to be involved in the diagnosis, treatment, and follow up of their condition when more than one reasonable course of action exists (Charles et al., 1997; Stiggelbout, Pieterse, & De Haes, 2015). A representation of the different models of decision making about treatment by Charles et al (Charles et al., 1999) is as shown in Table 1 .

Table 1: Models of Shared Decision Making about treatment by Charles et al 1999

Analytical stages		Paternalistic model	Intermediate approaches	Shared model	Intermediate approaches	Informed model
Information exchange	Flow	One way (largely)		Two way		One way (largely)
	Direction	Doctor ↓ patient		Doctor ↓ ↑ patient		Doctor ↓ patient
	Type	Medical		Medical and personal		Medical
	Minimum amount	Legal requirement		Anything relevant for decision making		Anything relevant for decision making
Deliberation		Doctor alone or with other doctors		Doctor and patient (plus potential others)		Patient (plus potential others)
Who decides what treatment to implement?		Doctors		Doctor and patient		Patient

However, some healthcare practitioners have conflicting ideas and express doubts that patients are not interested in the decision-making process, they lack the ability to do so, or can make bad decisions (Gravel, Légaré, & Graham, 2006). Moreover, they are of the opinion that shared decision making cannot be put into practice successfully due to time complaints as more time is needed to fully engage in shared decision making in clinical practice than to offer the usual care. Some do claim that they are already putting it into practice, but evidence gathered from patient experience surveys carried out have shown that this is not generally the case.

There have been quite a lot of views as to what forms the basis of patient involvement in health care delivery, and vast varieties of interpretation of what the concept of shared decision making is all about (Thompson, 2007). Roland Grad et al., defined it as a structured process where both the clinicians and the patients work cooperatively to arrive at an evidence-informed and nonconflicting decision. They also expatiated on this by saying, shared decision making is most useful as a screening tool, especially in conditions where there is a close agreement between threats and benefits in the presence of the patient values and preferences.

Nevertheless, the most widely cited and accepted definition of the concept of shared decision making is by Charles et al. They defined the term shared decision making” as the involvement of both the clinician and the patient, information exchanged between them, both parties taking steps in deciding

the preferred treatment option and concluding on which of the treatment regime to implement” (Charles et al., 1997).

1.1 Shared decision making

1.1.1 Elements of Shared decision making

For shared decision making to exist, some key elements need to be in place. These elements include promotion of choice awareness, diagnosing of the condition, discussing germane options, discussing pros and cons, deliberation of patient’s views and preferences, concluding on the final decision and arrangement of a follow up session (Stiggelbout et al., 2015; Wieringa et al., 2019). However, France Legare and Witterman, 2013 only identified three elements as most essential. These were, recognizing and acknowledging the need for a decision, knowing and understanding the suitable available evidence and lastly, incorporating patients’ values and preferences into the decisions (Légaré & Witteman, 2013).

1.2 Steps of Shared Decision Making

A three-step model by Elwyn and co-authors to help with the implementation of shared decision making in clinical practice have been proposed in literatures (Elwyn et al., 2012). The simplified model is based on three important steps which consist of, choice talk, option talk and decision talk. Choice talk can be defined as the step of the patients been aware that relevant options exist. Option talk on the other hand is making sure that the patient is well informed by providing more comprehensive information concerning the available options. Lastly, the decision talk has to do with contributing to the work of taking into consideration preferences and deciding on what is best. A brief summary of the three-step model of shared decision making and their components is shown in Table 2.

Table 2: Brief Summary of the three steps of Elwyn et al’s Model of Shared Decision Making (Elwyn et al 2012)

Model	Component
Choice talk	<ul style="list-style-type: none"> • Step back • Offer choice • Justify choice-preferences matter • Check reaction • Defer closure

Option talk	<ul style="list-style-type: none"> • Check knowledge • List options • Describe options-explore preferences • Pros and Cons • Provide patient decision support • Summarize
Decision talk	<ul style="list-style-type: none"> • Focus on preferences • Elicit preferences • Move to a decision • Offer review

In 2015, Stiggermout and colleagues published even easier memorized steps to follow in clinical practices after making some adjustment to the three-step model by Elwyn and co-authors (Stiggelbout et al., 2015). The four steps include the patient is notified by the health care practitioner that a decision needs to be made, as the patient’s viewpoint is of great value; explanation of the various options, with their pros and cons by the healthcare practitioner; the health care practitioner have a discussion with the patient concerning his/her preferences, while supporting them in deliberations; and discussion of the patients decisional role, concluding or postponing the decision, and talk about potential follow up visit (Stiggelbout et al., 2015).

1.3 Nature of Shared Decision Making

Basically, shared decision making is an interpersonal, interdependent process that supports conversations between the health care professional and the patient, as they cooperate in making decisions about the patient’s health care (Charles et al., 1997; Légaré & Witteman, 2013). Shared decision making is specific to each individual patient and relies heavily on the medical evidence, the professional’s clinical expertise, and the distinctive characteristics of the patient and his or her family members (Légaré & Witteman, 2013).

Some factors which affect the process of shared decision making include cultural factors and those that impact patient-clinician interactions, which are mutual trust and language agreement or disagreement between the patient and the health care provider (Légaré & Witteman, 2013). Shared decision making is mostly used under conditions of doubt (Politi, Lewis, & Frosch, 2013). Doubt usually occur when medical evidence and clinical expertise suggest that there is more than one medically available treatment option, and the choice of the best treatment for each given patient

depends solely on his or her preferences, attributes and circumstances. Doubt can take place when scientific evidence is missing or lacking, or when conflicting evidence from a variety of study shows no decisive conclusion (Légaré & Witteman, 2013).

Also, doubt arises at the level of each patient's decision, since the probabilities of risks and benefits in the whole population cannot be linked directly to any given patient (Légaré & Witteman, 2013). Thus, both the clinicians and the patients need help in resolving doubts when faced with clinical decisions to ensure the maximum quality of care. In the context of clinical practice, the notion that the health care professional is the only one who needs access to evidence have been cast aside. This is to say that, shared decision making is of the opinion that both parties be given access to the available evidence.

1.3.1 Clinical Implication

Shared decision making while benefitting patients and improving their experience with the health care system, also increases the use of relevant evidence by the health care professionals in an ideal clinical practice (Légaré & Witteman, 2013). Moreover, it creates a room for the patients to be actively involved in clinical decisions, with the health care professionals accepting decisions that are not necessarily what he or she considers as the best course of action, but that to which the patient is prepared to actively commit.

1.4 Decisions in Optometry

There are varying perspective relating to optometry as a profession, as such, the World Council of Optometry (WCO) defined it as a field of study that is self-governed, educative and controlled (Smith, 2002). The scope of optometric practice and the levels of education of optometrists vary widely globally. The Global Competency-Based Model of Scope of Practice in Optometry is the formally adopted rational framework which addresses this diversity in the scope of optometric practice, and for the promotion of better unification of optometric education internationally (Padilla & di Stefano, 2009). During an eye examination, decisions relating to the treatment and management of ocular and visual disorders, are been made by the optometrist based on the patient's history, symptoms, signs and other findings (Sundling, Stene, Eide, & Hugaas Ofstad, 2019).

Decisions are known to have great impact in the patient outcomes, satisfaction, functional status and quality of life (Elwyn et al., 2012). Moreover, shared decision-making is been known to be the ethical thing to do, and a core value in creating new relationships between clinicians and patients where options can be discussed, thereby reducing clinical errors, adverse effects and lower treatment cost (Holzmueller, Wu, & Pronovost, 2012). This is vital in optometric practices as patient-centred care bring about improvement in clinician satisfaction (Hudon, Fortin, Haggerty, Lambert, & Poitras, 2011).

In medicine, the prevailing view among medical professionals is that the patients have the right to be informed, and their opinions do count when it involved their care (Carlsen & Aakvik, 2006). When it pertains studies in the optometric world, so far based on my knowledge there has only been few studies assessing shared decision making in optometric practices (Sundling, Ofstad, Eide, & Gerwing, 2019).

1.5 Measurements for Shared Decision Making

The different category of measurements for shared decision making includes decision antecedent (e.g. role preference), the process involved in the decision (e.g. observed or perceived attitude of the professional), or the outcomes of the decision (e.g. decisional disagreement, decisional guilt, and satisfaction) (Joosten et al., 2008). The process of shared decision making is usually assessed by either the patient, the professional or by an external witness (Doherr, Christalle, Kriston, Härter, & Scholl, 2017).

Several tools have been designed to measure the extent to which shared decision making takes place in the clinical encounter. The observing patient involvement in decision making (OPTION) scale is the most widely used instrument for assessment of the extent to which professionals involve their patients during decision making process (Elwyn et al., 2003). However, due to some drawbacks it was revised to a shorter form with just five items to assess shared decision making from a witness's perspective (Elwyn et al., 2005). These drawbacks include negligence of the option scale to consider dyadic features, restriction of range pertaining to different levels of patient involvement, non-independence among several of the option items, and few studies supporting the convergent validity of the option scale.

On the other hand, there are several other instruments that assess shared decision making from the patients' perspective. Some of the prominent measures are the perceived involvement in care (PICS) scale and the ColloboRATE measure.

When it comes to assessing shared decision making from the perspective of both the health care professional and the patient, only a few instruments exist even though shared decision making is conceived as a process that involves both parties. These are the Dyadic OPTION scale, Multifocal Approach to the Sharing in Shared Decision Making (MAPPIN'SDM) Scale and the 9-item Shared Decision-Making Questionnaire (SDM-Q-9). The 9-item shared decision-making questionnaire is the most used interventions to enhance shared decision making. This is probably resulting from its psychometric properties, good acceptance and ease of administration, with only nine items assessing the viewpoints of both parties involved (Kriston et al., 2010).

2 Aim

The main aim of the study was to assess shared decision making in Norwegian optometric practice from the perspective of both the patients and the optometrists using the 9-item shared decision-making questionnaire (SDM-Q-9 and SDM-Q-Optometrist).

The main aim was based on the following objective or research questions.

1. Does shared decision making occur in optometric practice?
2. To what extent do optometrists involve customers/patients in decisions?
3. To what extent do customers/patients experience to be involved by the optometrists in decisions?

The result of this study would enlighten us on whether the customer/patient and optometrist have a common understanding of why the patient underwent an eye examination, the solutions that were advised or given, and how the customer/patient were involved in the choices that were made.

The knowledge could also be used to develop communication training for optometry students and optometrists in practice.

3 Methods

3.1 Study Design

The study had a descriptive cross-sectional design, with the aim to examine if the customer/patient and their optometrist have a common understanding of why the patient came for an eye examination, the solutions that were provided and how the customer/patient were involved in the choices that were made. Approval for the study was obtained from the Norwegian Centre for Research Data (NSD).

3.2 Study Participants

The study population was optometrist in Norway and patients examined by Norwegian optometrists. The sample population was optometrists working in Specsavers stores in Norway, and their patients. An email containing the description of the study, with written information for the patients, and the 9-item shared decision-making questionnaires (SDM-Q-9 and SDM-Q-Optometrist) were distributed among all the optometrists working in Specsavers stores in Norway to invite them to be a part of the study. After the emails were distributed, only a few of the optometrists showed interest in the study. However, since the goal was to recruit all optometrists, phone calls were made across to all the optometrists and during this process, more of the optometrists showed interest. Interested and eligible patients received a written information of the study (Appendix 1) from their optometrists just before participating in the study. After reading and understanding what the purpose of the study was aimed at, the patients gave their informed consent. In all 12 optometrist and between one to five of their patients volunteered to participate. Data for a total of 45 patient encounters was collected. The data was collected using the 9-item shared decision-making questionnaires and was completed by both the optometrist and the patient after the eye examination. The customers/patients included healthy males and females between the ages of 18years and older, with no known history of cognitive impairment. All participating patients and optometrists had a good understanding of the Norwegian language to participate in the study.

3.3 Data Collection

The recruitment period and data collection for the study was between August to October 2020. Data were collected using the 9-item Shared Decision-Making Questionnaire.

3.3.1 9-item Shared Decision-Making Questionnaire

The self-reported 9-item shared decision-making questionnaire was developed as a revised scale of the original shared decision-making questionnaire (Kriston et al., 2010). The nine items of this questionnaire were selected through statistical analysis of questions/items based on the model of Shared decision making by Elwyn et al (Elwyn, Edwards, Kinnersley, & Grol, 2000). The questionnaire measures patients' perceptions of shared decision making on a 5-point Likert scale and shows a unidimensional structure (Kriston et al., 2010). The original instrument is reliable, well accepted and validated to be an effective tool for assessing shared decision making in clinical settings (Kriston et al., 2010; I. Scholl et al., 2011). An internal consistency of $\alpha = 0.86$, and $\alpha = 0.94$ was found for the instrument both in Germany and the United States because of the high correlation between items on the scale.

The items the questionnaire examines include: (1) my doctor made clear that a decision needs to be made; (2) wanted to know exactly how I wanted to be involved in making the decisions; (3) my doctor told me that there are different options for treating my condition; (4) my doctor precisely explained the advantages and disadvantages of the treatment options; (5) my doctor helped me understand all the information; (6) my doctor asked me which treatment option I prefer; (7) my doctor and I weighed the different treatment options; (8) my doctor and I selected a treatment option together; (9) my doctor and I reached an agreement on how to proceed.

The 9-item shared decision-making questionnaire, also has a physician version, called the SDM-Q-Doc which measures shared decision making from the perspective of the physician (Isabelle Scholl, Kriston, Dirmaier, Buchholz, & Härter, 2012). The SDM-Q-Doc has good internal consistency ($\alpha = 0.88$) and the same response scale as the SDM-Q-9 (Isabelle Scholl et al., 2012). The items the questionnaire examines include: (1) I made clear to my patient that a decision needs to be made; (2) I wanted to know exactly from my patient how he/she wanted to be involved in making the decisions; (3) I told my patient that there are different options for treating his/her condition; (4) I precisely explained the advantages and disadvantages of the treatment options to my patient; (5) I helped my patient to understand all the information; (6) I asked my patient which treatment option he/she prefers; (7) my patient and I weighed the different treatment options; (8) my patient and I selected a treatment option together; (9) my patient and I reached an agreement on how to proceed.

In order to examine the shared decision making in optometric practice, a reliable tool is necessary. The original 9-item shared decision-making questionnaires (SDM-Q-9 and SDM-Q-Doc) which has been translated into a Norwegian version, was adapted and slightly modified to reflect the optometry setting by Sundling (“doctor” was replaced with “optometrist”) (Sundling, personal communication). This has also been used in previous studies (Sundling, Ofstad, et al., 2019). The items the SDM-Q-9 (Appendix 2) examines include: (1) my optometrist made clear that a decision needs to be made; (2) wanted to know exactly how I wanted to be involved in making the decisions; (3) my optometrist told me that there are different options for treating my condition; (4) my optometrist precisely explained the advantages and disadvantages of the treatment options; (5) my optometrist helped me understand all the information; (6) my optometrist asked me which treatment option I prefer; (7) my optometrist and I weighed the different treatment options; (8) my optometrist and I selected a treatment option together; (9) my optometrist and I reached an agreement on how to proceed. (Sundling, Ofstad, et al., 2019).

The items the SDM-Q-Optometrist (Appendix 3) examines include: (1) I made clear to my patient that a decision needs to be made; (2) I wanted to know exactly how he/she wanted to be involved in making the decisions; (3) I told my patient that there are different options for treating his/her eye condition; (4) I precisely explained the advantages and disadvantages of the treatment options to my patients; (5) I helped my patient understand all the information; (6) I asked my patient which treatment option he/she prefers; (7) my patient and I weighed the different treatment options; (8) my patient and I selected a treatment option together; (9) my patient and I reached an agreement on how to proceed. The items of the patient and optometrist questionnaire mirrors each other.

3.3.2 9-Item Shared Decision-Making Questionnaire for Use in Optometry

The questionnaires, SDM-Q-9 and SDM-Q-Optometrist were administered to the participants in the study immediately after the eye examination to measure shared decision making in optometric practices. All participants answered the questions on a 5-point Likert scale ranging from completely disagree (0) to completely agree (5) for each of the 9 items, giving a score of between 0 to 45, where 0 indicates the lowest of perceived shared decision making and 45 the highest of perceived level of shared decision making (Kriston et al., 2010; Isabelle Scholl et al., 2012).

The questionnaires also included two open ended questions were the participants indicated which visual complaint/problem the eye examination was about, and the decision made during the encounter. In order to assess if there were differences in the patients’ and optometrists’ reported

reasons for what the visual complaint/problem was about and treatment decision, the reasons for what the visual complain was about and treatment decisions were grouped into categories and matched for the patients and optometrists.

General demographics data was also recorded for both the optometrist (gender, age, educational level and number of years in practice), and the patient (gender and age). This data was de-identified before analysis. The questionnaires completed for an encounter had the same unique id-number, each pair of optometrist-patient questionnaire was linked by the same unique id-number.

3.4 Data Analysis

The open-ended responses were collated in Microsoft Excel. The quantitative data gathered from the measures were also entered and organized using the Microsoft Excel, after which the statistical analysis was done in Excel/ SPSS software version 26 (IBM, Chicago,IL,USA). The quality of the data gathered was verified, and the items subjected to check for missing data. There were no missing data for the optometrist questionnaire, and only four missing data for the patient questionnaire which were replaced with the median (Badr, 2019).

Descriptive statistics were analyzed using the frequency and summation of the total scores for each of the nine questionnaire items , and the responses to the questionnaires were considered to have a non-normal distribution after evaluation using the Shapiro-Wilk test for normality (Ghasemi & Zahediasl, 2012). Therefore, the responses of the optometrists and the patients were presented as median and range. Differences in the median scores between the patients and the optometrists and reason for visit and advice were analyzed using the Mann-Whitney U test after the total scores were computed for each of the nine questionnaire items. A p-value of <0.05 was regarded as statistically significant evidence of difference between groups.

3.5 Ethics

The participation for this study was voluntary for both patient and optometrist. Interested optometrist was informed through an email, and the patients through a written information presented to them during the eye examination. Moreover, all participants were guaranteed of absolute data confidentiality, and since participation for involvement in the study was voluntary, all the participant was well informed that they can discontinue at any given time, without having to

explain their decision for withdrawal. There were no negative consequences for patients who did not want to participate.

4 Results

A total of 45 survey questionnaire pairs were analysed. In all, 12 optometrists and 45 patients completed the questionnaires. The average(std) age of the optometrists was 42(\pm 11) years with a range of 25 to 63 years, reported on average(std) 17(\pm 12) years of experience working as an optometrist with a range from 1 to 38 years of experience. The mean(std) age of the patients was 52(\pm 20) years with a range from 18 and 80 years. In terms of gender, eight (67%) optometrists and 29 (64%) patients were female. Each optometrist examined several patients ranging from one to five. Most of the optometrist had a bachelor's degree in optometry (67%), and the remaining, had the older engineering degree or master's degree in optometry.

The median sum SDM-Q-9 score and range for the patients was 41 and from 15 to 45. The median sum SDM-Q-Optometrist score and range for the optometrists was 40 and from 22 to 45. However, there is a much greater variability in patients scores compared to optometrists scores. The median and range item scores for the patients and the optometrists is outlined in Table 3 and Table 4 and the distribution of items scores for the patients and the optometrists are shown in Figure 1 and Figure 2.

Table 3: The median and range item scores for the patients.

Items	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9
Median	5	5	4	4	5	5	5	5	5
Range	0-5	1-5	0-5	0-5	3-5	0-5	0-5	2-5	3-5

Table 4: The median and range item scores for the optometrists

Items	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9
Median	5	5	5	5	4	5	4	4	5
Range	1-5	2-5	0-5	1-5	2-5	0-5	0-5	1-5	2-5

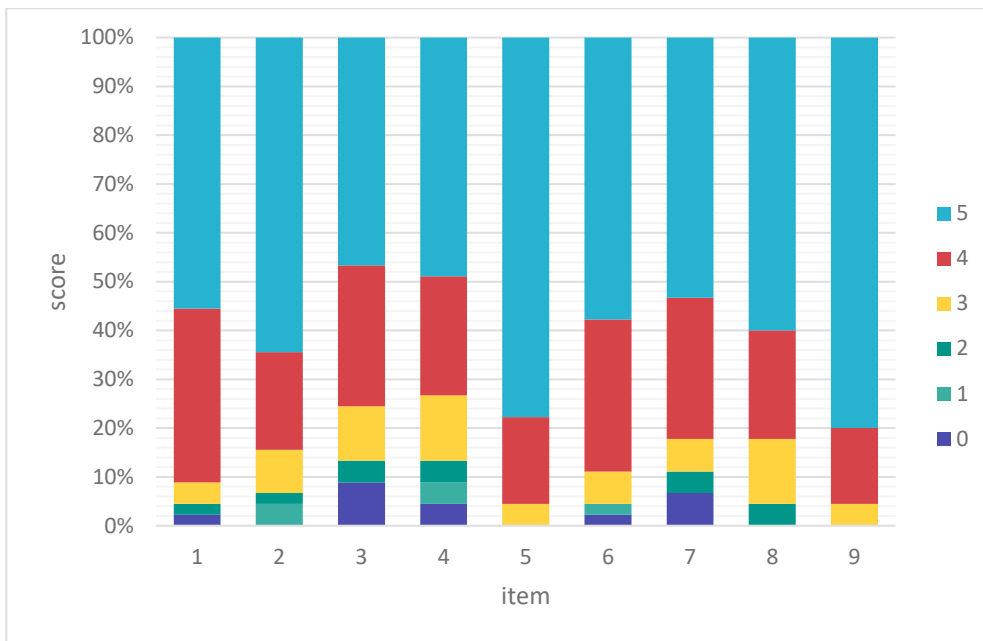


Figure 1: Patients responses for the SDM-Q-9 items on a 5-point Likert scale.

Where 0 = completely disagree and 5 = completely agree; 1 = my optometrist made clear that a decision needs to be made; 2 = my optometrist wanted to know exactly how I want to be involved in making the decision; 3 = my optometrist told me that there are different options for treating my eye condition; 4 = my optometrist precisely explained the advantages and disadvantages of the treatment options; 5 = my optometrist helped me understand all the information; 6=my optometrist asked me which treatment option I prefer; 7 = my optometrist and I thoroughly weighed the different treatment options; 8 = my optometrist and I selected a treatment option together; 9=my optometrist and I reached an agreement on how to proceed.

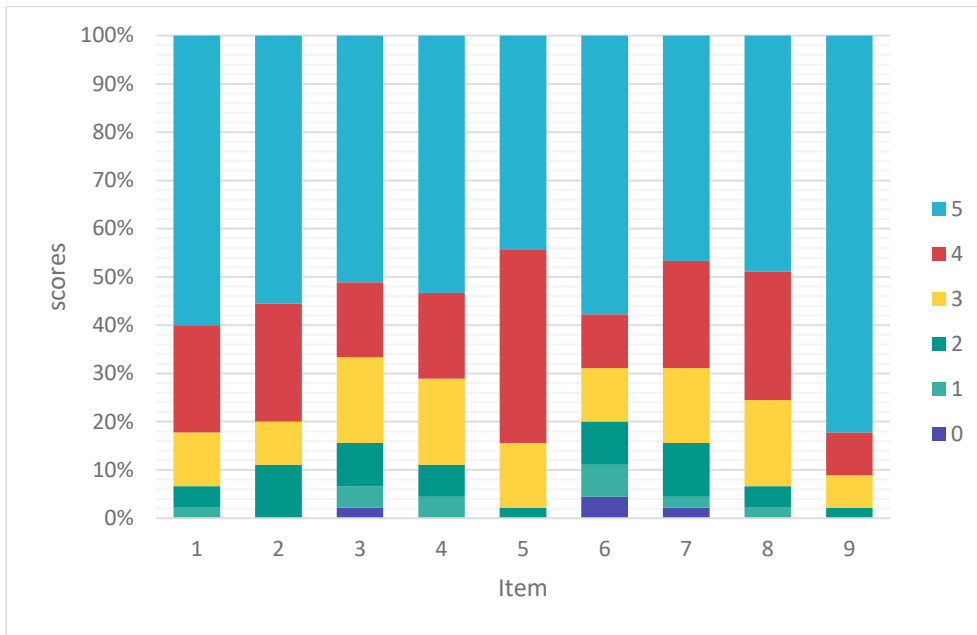


Figure 2: Optometrists response for the 9 SDM-Q-O items on a 5-point Likert scale.

Where 0 = completely disagree and 5 = completely agree;;1 = I made clear to my patient that a decision needs to be made; 2 = I wanted to know exactly from my patient how he/she wants to be involved in making the decision; 3 = I told my patient that there are different options for treating his/her eye condition; 4 = I precisely explained the advantages and disadvantages of the treatment options to my patient; 5 = I helped my patient understand all the information; 6 = I asked my patient which treatment option he/she prefers; 7 = my patient and I thoroughly weighed the different treatment options; 8 = my patient and I selected a treatment option together; 9 = my patient and I reached an agreement on how to proceed.

Table 5: Median and result of Mann-Whitney U test comparing patients' and optometrists' responses for the 9 items.

Items	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9
median(patients)	5	5	4	4	5	5	5	5	5
median(optometrists)	5	5	5	5	4	5	4	4	5
p-value	0.971	0.403	0.990	0.750	0.001*	0.418	0.362	0.279	0.933

*statistically significant difference. Mann-Whitney U statistics, ¹

¹ p=0.001

There were no statistically significant differences found between the responses of the optometrists and those of the patients for the 9-items of the questionnaire, except for item 5, the aspect of “understanding of all the information” (Mann-Whitney U test 41 versus 40, $p=0.001$). The patients scored higher than the optometrists on the aspect “the optometrist helped the patient to understand the information”.

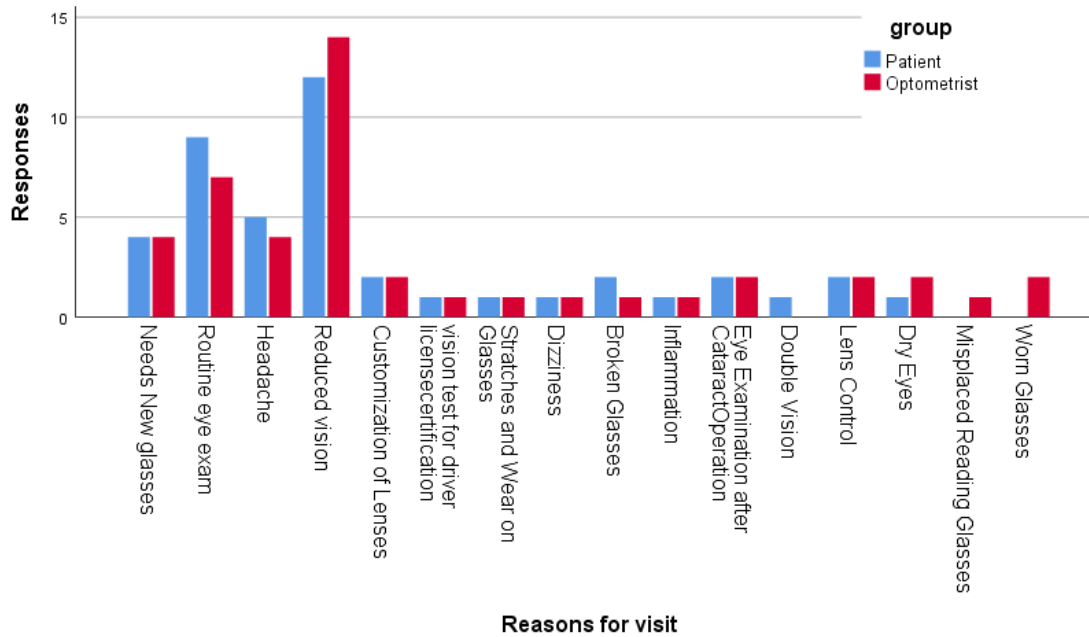


Figure 3: Reasons for visit reported by the patients and the optometrists

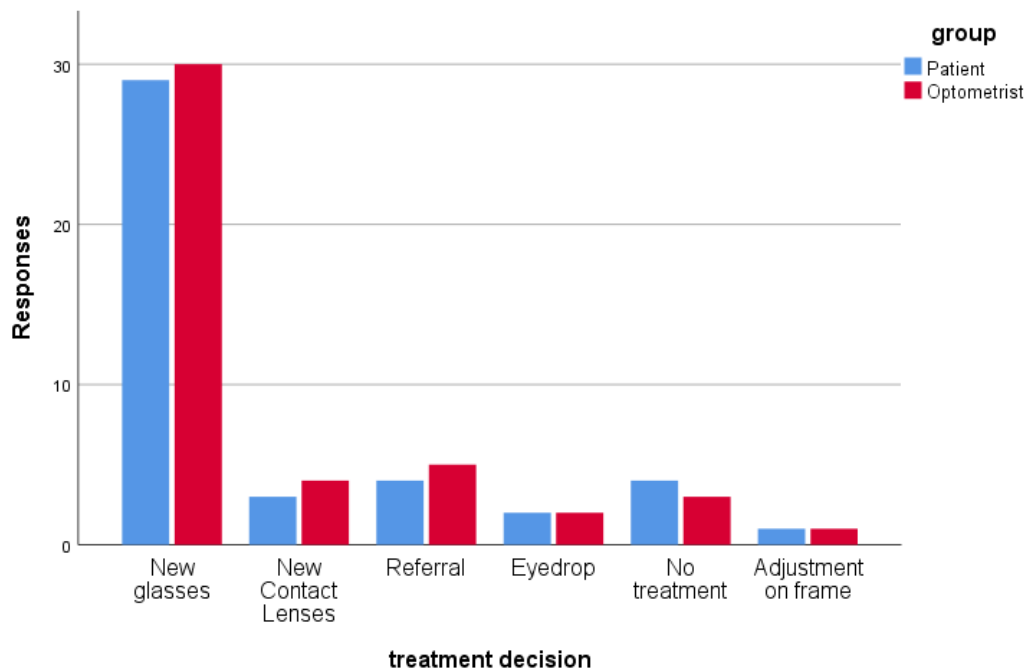


Figure 4: Treatment decision reported by the patients and the optometrists

When grouped in categories, there were no significant differences between the patients and optometrists reported reason for what the examination was about. However, in 9 out of 45 of the visits, the optometrists reported more reasons for what the examination was about compared to the patient. A typical example was when the optometrist reported worn glasses, broken rod and reduced near vision as the reasons for the visit, and the patient only reported broken glasses. The most reported reasons for the visit were reduced vision and routine eye examination,

Figure 3. In 1 out of 45 of the visits, no reason was reported for what the examination was about.

The patients and the optometrists reported the same treatment decisions in 45 out of 45 of the visits, even though the optometrists reported more decisions in 5 out of 45 of the visits. Figure 4 shows that most of the patients and the optometrists reported new glasses as the provided treatment or decision made. In 2 out of 45 of the visits, there was no reported treatment decisions given.

5 Discussion

The findings of this study revealed no significant difference in perception of decision making between patients and optometrists, except for provision of information ($p=0,001$). Moreover, most of the optometrists and the patients did perceived that the decision-making process was shared. These aspects include desire to know how the patients want to be involved in the decision-making process, obtaining patients' preference for the different treatment options, and both patients and optometrists reaching an agreement on how to proceed. These findings are consistent with Sundling et al, who stated that there was a match between the optometrists' perception of patients' needs and their clinically relevant decisions (Sundling, Ofstad, et al., 2019).

Furthermore, the patients had a slightly higher median sum score than the optometrists. However, there is greater variability in patients scores than the optometrists score, this signifies that the patients reported more positive experiences with shared decision making than the optometrists. These findings concur with those of a recent cross sectional study published in 2020, where they found patients scored significantly higher than the physicians when SDM was assessed in haematology using the 9-item shared decision making questionnaires (SDM-Q-9 and SDM-Q-Doc) (Geerts, van der Weijden, Moser, & Bos, 2020). Moreover, similar findings were reported in a cross sectional study in dietetic practice which compared the patients' and dietitians' perception of patient centred care ($p=0.004$) (Sladdin, Ball, Gillespie, & Chaboyer, 2019).

With regards to the significant difference for item 5, in the aspect of "provision of information", the patients scored better than the optometrists. This could signify that the patients are more happy/satisfied with the information, have been given a lot of information to work with, or do not necessary know what information they are missing, while the optometrists on the other hand either down grade themselves or they underestimate the information they provided to their patients. General patient satisfaction with information delivered is comparable to those previously reported in a university hospital setting, with about 20% of the patients not satisfied with information on benefits and risks of treatments and investigations (Moret, Rochedreux, Chevalier, Lombraill, & Gasquet, 2007).

Moreover, since the patients are happy/satisfied with that the level of the information given was tailored to the amount of information they wanted, it is clear evidence that optometrists in my study

are practicing what have been recommended as the ethical thing to do. Thus, the patients might be well satisfied with the overall services rendered. However, the optometrists could provide even better care than they are already doing, as it is not uncommon that patients rate clinical decisions higher than the health care practitioners themselves. A study by Carlsen et al., 2006 carried out in a hospital setting, stated that general practitioners generally preferred shared decision making but to a lesser degree than patients.

It is important to make mention that in this study, the patients' perception of the reason(s) for visit matched with the optometrists' reported reason(s) for visit. The most reported reason why patients came to see the optometrists was because of reduced vision and to have a routine eye examination. Besides, there was agreement in the treatment decisions between patients and optometrists and prescribing of progressive lenses was the most reported treatment solution they ended up with during the clinical encounters. These findings share some similarities with a recent cross-sectional study also conducted in Norway using the shared decision-making questionnaires and involving 11 optometrists and 35 patients who had attended an eye examination in an optometric practice (Sundling, Ofstad, et al., 2019). In 68% of visits, the patients and optometrists reported the same management decisions, and in 21% of visits, the optometrists reported more decisions than the patient did.

Furthermore, the patients and the optometrists had the same opinion for needs for new glasses, customization of lenses, vision test for driver license certification, scratch on glasses, dizziness, inflammation, eye examination after cataract surgery and lens control. More patients than optometrists reported routine eye examination, broken glasses and headache as the reason for what the examination was about. The optometrists reported more for reduced vision and dry eyes. Only patients reported for double vision, and the optometrists for misplaced glasses and worn glasses. This could signify that both the patients and the optometrists might have had different views of wording to the same topic. The optometrists reported more than the patients for new contact lenses and referrals as the treatment decision, and both had the same opinion for eyedrop and adjustment of frame. These findings share some similarities with a recent cross-sectional study also conducted in Norway, where in visits with disagreement between patient and optometrist reported reasons for visit (.24), the reported management decisions agreed and the decision matched with the patient's reported reason for visit, however in 4/7(.57) of the visits, the optometrists reported more decisions than patients (Sundling, Ofstad, et al., 2019).

Another interesting result is that most of the optometrists in my study had a bachelor's degree in optometry and were older. This is almost same findings as a previous study by Sundling et al who stated that most optometrists in optometric practices had 3 years or more of higher education, with the vast majority been female and younger (Sundling et al., 2007). It could also be possible that the scores for the optometrists could have varied differently or influenced if the optometrists were younger and had a master's degrees in optometry. Sundling et al stated in their cross-sectional experimental study on sensitivity and specificity of Norwegians' evaluation of diabetic retinopathy in single-field retinal images that optometrists with higher education showed significantly higher sensitivity when compared with those who had basic optometric education (Sundling, Gulbrandsen, & Straand, 2013).

Moreover, most of the patients were older females in their mid-50's, and the scores for the patient could have been different if there were older or younger male. It is expected that people that are older would score higher and are more satisfied. This could be related to respect of authority and been more paternalistic, as shown by a qualitative descriptive study in advanced kidney care, where they found out that older patients were happy with the decisions made and have been involved in the decision-making process (Thomas, Jenkins, McManus, & Gracey, 2016). Moreover, Maly et al., stated that older patients felt more comfortable when the physicians made the decisions on their behalf (Maly, Umezawa, Leake, & Silliman, 2004).

5.1 Strengths and Limitations

Primarily, one very important strength of this study was the use of a reliable and valid self-reported measure. The anonymous nature of the questionnaires was intended to minimize any response bias while maximizing sincerity on the part of the participants involved in the study. The questionnaires were completed at a convenient time without any external influences. The optometrists were instructed to distribute the questionnaires to only patients who met with the inclusion criteria, however I could not directly monitor to see and therefore cannot say if it was followed.

It is important to note that the optometrists did not receive any shared decision-making training or even instructed on how to apply them when they were recruited into the study, signifying that they were most likely practicing the same basic clinical technique they used daily during an encounter.

Nevertheless, this study would not be complete without making mention of some of the shortcomings. Although the collected information provided interesting perspectives on shared decision making, I could not recruit into the study as initially planned all the 79 stores of Specsavers. The reason been that the corona virus pandemic had a great impact in preventing this from happening.

However, for the stores that finally accepted to participate, I could not reach the intended five (5) patients per optometrists, also there was a broad range of optometrists with regards to age and work experience. The educational background of the optometrists did not vary widely, and because of this the differences in the level of shared decision between these groups, was not analyzed, as it was of small size and very unlikely that the background differences would have an impact on the level of shared decision making. The characteristics of the optometrists and the patients who did not respond or complete the questionnaires was uncertain, so it is difficult to ascertain if their perspective would either have the necessary power to show more significant differences or be different from their counterparts who participated. I would infer that the study is not enough representation of optometric practices, as these findings may not be generally applicable to a larger sample population considering the small sample population used. One should be careful to generalize based on these findings, since it's a small sample in terms of optometrists in Norway and not all of the optometrist are older with a bachelor's degree. There are lots of them who are much younger and newly educated and may have a different educational background.

5.2 Research/ Practice Implications

Considerably with the findings in this study, it is beneficial that the optometrists are informed of the outcome of the survey questionnaires results. Thus, the awareness to these findings foster self-reflection in the optometrists, and a basis on how to provide information in relation to their optometric practices. Self-reflection and patient centered care are mutualistic, they work hand in hand (Isabelle Scholl, Zill, Härter, & Dirmaier, 2014).

Another important suggestion is that these findings would also be useful if embedded into continued professional development workshops, webinars, and in the form of presentations for optometry

students and most especially to the optometric practices who were part of this study. Several evidences have suggested that effective and efficient training initiatives/programs possible to educate health care professionals on how to show more shared decision making behaviors is vital to improving the implementation of shared decision making propagated as the best clinical practice model (Elwyn, Frosch, & Kobrin, 2016).

The DICTUM (The decision identification and classification taxonomy) has been validated as a potential tool to expand the understanding of decisions made and communicated (Ofstad, Frich, Schei, Frankel, & Gulbrandsen, 2016) .Thus, it could aid the facilitation of shared decision making in optometric encounters. The decision tool, which was developed based on the SOAP format for clinical consultation comprises also all relevant decisions that have an impact on the clinical course of action such as diagnostic, treatment and management decisions in optometric practices (Sundling, Stene, et al., 2019). Knowledge about clinical decisions has the potential to bridge the gap between the optometrists and the patients regarding their perceptions for shared decision making, thereby creating a better understanding of each other needs and expectations. This should be further explored in future studies.

6 Conclusion

Three key findings were revealed in this study. Firstly, a significant difference between the optometrists' and patients' perceptions of shared decision making was found, in the aspect of "understanding of all the information". Secondly, the patients' perceptions of shared decision making were higher than the optometrists. Thirdly, there were no difference between the patients' and optometrists' reported reason for what the examination was about and the treatment decisions.

Generally, both patients and optometrists, perceived the decision-making process to be good, however the aspect of provision of information needs more attention. It seems this aspect of shortcoming should be reflected in the education programs of optometry students and in future training initiatives to improve SDM in optometric practices. Further research and analysis of the responses of patients and optometrists using a larger sample size will expand our knowledge on shared decision making in optometric practices.

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Appendix 1-3

Appendix 1: Patient's Written Information

Appendix 2: 9-item shared decision-making questionnaire (SDM-Q-9)

Appendix 3: 9-item shared decision-making questionnaire (SDM-Q-Optometrist)

Vil du delta i forskningsprosjektet

«Samvalg i optometrisk praksis»

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å undersøke samvalg i optometrisk praksis. I dette skrevet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

Formål

Formålet med prosjektet er å undersøke samvalg i optometrisk praksis. Det vil si i hvilken grad du som kunde/pasient blir tatt med på valg knyttet til din behandling og oppfølging av syn og øyehelse. Hensikten å undersøke om kunde/pasient og optiker har en felles forståelse av hvorfor du til synsundersøkelse og løsningene som ble gitt, og hvordan du som kunde/pasient ble involvert i valgene som ble gjort. Kunnskap fra prosjektet vil bli brukt til å utvikle kommunikasjonsopplæring for optometriststudenter og optikere i praksis.

Min problemstilling er:

I hvilken grad skjer samvalg i optometrisk praksis?

I hvilken grad involverer optikere kunder/pasienter i beslutninger?

I hvilken grad blir pasientenes preferanser vurdert under beslutningstaking?

Hvilken informasjonsutveksling skjer mellom kunde/pasient og optiker?

Prosjektet er en masteroppgave. Prosjektet vil inkludere minst 158 kunder/pasienter.

Hvem er ansvarlig for forskningsprosjektet?

Universitetet i Sørøst-Norge er ansvarlig for prosjektet.

Hvorfor får du spørsmål om å delta?

Invitasjon om å delta går til alle optikere i Specsavers Norge og 5 påfølgende pasienter som de undersøker.

Informasjonsskrivet med invitasjon til å delta er distribuert til alle butikker i Specsavers Norge, og en ansvarlig i hver butikk er blitt bedt om å dele dem ut til aktuelle deltagere, kunder/pasienter og optikere.

Hva innebærer det for deg å delta?

Hvis du samtykker i å delta i prosjektet, ber vi deg om å fylle ut et spørreskjema. Det tar bare noen få minutter å fylle ut spørreskjemaet. Spørreskjemaet inneholder spørsmål knyttet til samvalg, årsak til synsundersøkelsen, løsninger som ble gitt og samvalg om beslutninger.

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Data vil bli innsamlet anonymt. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta. Utfylt spørreskjema ansees som samtykke til deltagelse.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrivet.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?

Prosjektet skal etter planen avsluttes i November 2020 og opplysningene vil slettes etter dette.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi vil ikke behandle personopplysninger om deg basert på ditt samtykke.

Hvor kan jeg finne ut mer?

Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:

- Universitetet i Sørøst-Norge ved Vibeke Sundling, veileder/prosjektansvarlig, vibeke.sundling@usn.no eller telefon: 92 42 4 3 60 eller masterstudent Chinenye Linda Eze, ezechinenye@outlook.com eller telefon: 96 98 78 80.
- Vårt personvernombud: Paal Are Solberg, personvernombud@usn.no eller telefon: 35 57 50 53
- NSD - Norsk senter for forskningsdata AS, personverntjenester@nsd.no eller telefon: 58 21 17.

Med vennlig hilsen

Prosjektansvarlig
Vibeke Sundling
(Forsker/veileder)

Appendix 2: 9-item shared decision-making questionnaire (SDM-Q-9)

Spørreskjema om medvirkning i beslutninger (pasientskjema)

 Jeg er: Kvinne Mann Alder:

Av hvilke grunner oppsøkte du optikeren (for eksempel hvilke plager)?

Hvilken beslutning ble tatt (for eksempel hvilken behandling/synskorreksjon)?

De etterfølgende utsagnene gjelder ovennevnte konsultasjon.

Kryss av for hvert utsagn hvor godt det passer.

1. Optikeren fortalte meg tydelig at det var nødvendig å fatte en beslutning.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passer overhodet ikke	Passer stort sett ikke	Passer ikke så godt	Passer ganske godt	Passer godt	Passer fullstendig

2. Optikeren ville vite nøyaktig hvor mye jeg ønsket å medvirke i beslutningen.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passer overhodet ikke	Passer stort sett ikke	Passer ikke så godt	Passer ganske godt	Passer godt	Passer fullstendig

3. Optikeren fortalte meg at det finnes flere behandlingsmuligheter for plagene mine.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passer overhodet ikke	Passer stort sett ikke	Passer ikke så godt	Passer ganske godt	Passer godt	Passer fullstendig

4. Optikeren gikk nøye igjennom fordeler og ulemper ved de forskjellige behandlingsmulighetene

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passer overhodet ikke	Passer stort sett ikke	Passer ikke så godt	Passer ganske godt	Passer godt	Passer fullstendig

5. Optikeren hjalp meg å forstå all informasjonen.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passer overhodet ikke	Passer stort sett ikke	Passer ikke så godt	Passer ganske godt	Passer godt	Passer fullstendig

6. Optikeren spurte meg hvilken behandlingsmulighet jeg foretrakk.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passer overhodet ikke	Passer stort sett ikke	Passer ikke så godt	Passer ganske godt	Passer godt	Passer fullstendig

7. Optikeren og jeg overveide grundig de forskjellige behandlingsmulighetene.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passer overhodet ikke	Passer stort sett ikke	Passer ikke så godt	Passer ganske godt	Passer godt	Passer fullstendig

8. Optikeren og jeg valgte en av behandlingsmulighetene sammen.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passer overhodet ikke	Passer stort sett ikke	Passer ikke så godt	Passer ganske godt	Passer godt	Passer fullstendig

9. Optikeren og jeg avtalte hva som skulle skje videre.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Passer	Passer	Passer	Passer	Passer



ID-besøk:

Passer
overhodet ikke

stort sett ikke

ikke så godt

ganske godt

godt

fullstendig

Appendix 3: 9-item shared decision-making questionnaire (SDM-Q-Optometrist)

Spørreskjema om medvirkning i beslutninger (optikerskjema)

 Jeg er: Kvinne

 Mann

Antall år i praksis som optiker:

Av hvilke grunner oppsøkte pasienten din deg (for eksempel hvilke plager)?

Hvilken beslutning ble tatt (for eksempel hvilken behandling/synskorreksjon)?

De etterfølgende utsagnene gjelder ovennevnte konsultasjon.

Kryss av for hvert utsagn hvor godt det passer.

1. Jeg fortalte pasienten tydelig at det var nødvendig å fatte en beslutning.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passer overhodet ikke	Passer stort sett ikke	Passer ikke så godt	Passer ganske godt	Passer godt	Passer fullstendig

2. Jeg ønsket å vite akkurat hvor mye pasienten ønsket å medvirke i beslutningen.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passer overhodet ikke	Passer stort sett ikke	Passer ikke så godt	Passer ganske godt	Passer godt	Passer fullstendig

3. Jeg fortalte pasienten at det finnes flere behandlingsmuligheter for plagene.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passer overhodet ikke	Passer stort sett ikke	Passer ikke så godt	Passer ganske godt	Passer godt	Passer fullstendig

4. Jeg gikk nøye igjennom fordelene og ulempene ved de forskjellige behandlingsmulighetene

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passer overhodet ikke	Passer stort sett ikke	Passer ikke så godt	Passer ganske godt	Passer godt	Passer fullstendig

5. Jeg hjalp pasienten å forstå all informasjonen.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passer overhodet ikke	Passer stort sett ikke	Passer ikke så godt	Passer ganske godt	Passer godt	Passer fullstendig

6. Jeg spurte pasienten hvilken behandlingsmulighet han/hun foretrakk.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passer overhodet ikke	Passer stort sett ikke	Passer ikke så godt	Passer ganske godt	Passer godt	Passer fullstendig

7. Pasienten og jeg overveide grundig de forskjellige behandlingsmulighetene.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passer overhodet ikke	Passer stort sett ikke	Passer ikke så godt	Passer ganske godt	Passer godt	Passer fullstendig

8. Pasienten og jeg valgte en av behandlingsmulighetene sammen.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passer overhodet ikke	Passer stort sett ikke	Passer ikke så godt	Passer ganske godt	Passer godt	Passer fullstendig

9. Pasienten og jeg avtalte hva som skulle skje videre.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Passer	Passer	Passer	Passer	



ID-besøk:

Passer overhodet ikke	stort sett ikke	ikke så godt	ganske godt	godt	Passer fullstendig
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